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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,134	09/22/2003	Andreas Farbert	112740-867	2009
29177	7590	05/15/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			CHUNG, PHUNG M	
			ART UNIT	PAPER NUMBER
			2138	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,134

Applicant(s)

FARBERT ET AL.

Examiner

Phung My Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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Claim Objections

1. Claim 1 is objected to because of the following informalities:

line 4, "an outer code" should be changed to - - an outer coder - -;

line 12, "an inner code" should be changed to - - an inner coder - -"

lins 12-13, "where at least one of the outer code and the inner code is a three dimensional product code" should be changed to - - where at least one code of the outer coder and the inner coder is a three dimensional product code - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 6, lines 2-3, "wherein a number of shift position..., and from one layer to a next layer" is not clear as to what it means. After the "wherein" there should be some things that already mentioned before. Appropriate correction is required.

As per claim 7, lines 3-5, "decoding...by an inner code;
deinterleaving the code matrix; and
decoding the deinterleaved code matrix by an inner code." is not clear as to what it means.

For a suggestion, it should be changed to:

-- decoding the interleaved code matrix by an inner decoder;

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deinterleaving the decoded matrix; and
decoding the deinterleaved decode matrix by an outer decoder - -. Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-2 and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 14-15 and 18-19 of

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copending Application No. 10/429,581. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1-2 and 7 of the instant invention appeared to contain similar limitations as recited in claims 1, 14-15 and 18-19 of copending application 10/429,581 (for example: the limitation of 10/668,134 contains “a cuboid information matrix” which is narrower than the limitation of 10/429,581 “an information matrix”), and there is no reason why the rejected claims could not have been presented in the copending application. Thus, the invention defined in claims 1-2 and 7 are obvious variation of the invention defined in the copending application claims 1, 14-15 and 18-19.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following table shows the claims in 10/668,134 that are rejected by corresponding claims in the copending application 10/429,581.

Claims Comparison Table

	10/668,134	10/429,581
Claims	1	1, 14 and 15
	2	18
	7	19

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morelos-Zaragoza (XP-002229386 "The Art of Error 1-8 Correcting Coding" pgs. 115-116, 2002) in view of Lodge et al (XP-002229384 "High Code Rate Iteratively Decodable FEC Codes with Low Complexity and High Minimum Distance", pgs 8-12, May 28, 2000)

As per claims 1-3, Morelos-Zaragoza discloses a method for improving error correction of concatenated codes, the method comprising the steps of:

storing information bits...;

generating check bits...by an outer coder...forming a code matrix;

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cyclically interleaving the information bits and the respective check bits...to obtain an interleaved code matrix...; and

coding the bits of the interleaved code matrix by an inner coder. (See section 6.2.4 Concatenated Codes). Morelos-Zaragoza does not specifically disclose that the storing information bits, which form a cuboid information matrix and where at least one code of the outer coder and the inner coder is a three dimensional product code. However, Lodge et al disclose that the storing information bits, which form a cuboid information matrix and where at least one code of the outer coder and the inner coder is a three dimensional product code. (See abstract). Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the storing information bits and where at least one code of the outer coder and the inner coder is a three dimensional product code as taught by Lodge et al into the information bits of Morelos-Zaragoza to form a cuboid information matrix for three dimensional code.

As per claim 7, this decoding claim is rejected under similar rationale as set forth in the reversion of the coding claim 1.

As per claim 8, Lodge et al further disclose wherein an iterative decoding procedure is employed (line 4 of the abstract).


7. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung My Chung whose telephone number is 571-272-3818. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571- 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phung My Chung
Primary Patent Examiner